

AMENDMENT

Please enter the following amendments:

IN THE SPECIFICATION

Please replace the paragraph beginning at page 11, line 31 with the following rewritten paragraph:

The inventive structures are preferably disposed within microdevices such as microreactors with integral or adjacent heat exchangers, preferably microchannel heat exchangers. Examples of reactor configurations are disclosed in U.S. patent application ser. no. 6,680,044-09/640,903, which is incorporated herein by reference as if reproduced in full below. In one preferred embodiment, the invention comprises a reaction chamber and at least one adjacent heat exchange chamber. The catalyst (including support, nanotube layer and catalyst) can be sized to match the flow path of the reaction chamber such that flow is substantially through the pores of, rather than around the body of, the catalyst. In some preferred embodiments, the engineered catalyst (including voids within the catalyst) occupies at least 80%, more preferably at least 95%, of a cross-sectional area of the interior of a reactor chamber. Preferably, the engineered catalyst is a single piece (monolith) or line of pieces in the reaction chamber occupying at least 80 or 95% of the cross-sectional area of the interior of a reactor chamber. Preferably, the engineered catalyst is a removable piece or pieces rather than a coating.

Please replace the paragraph beginning at page 12, line 12 with the following rewritten paragraph:

Other devices for alternative embodiments of the invention include devices for distillation (such as described in U.S. Patent ~~Application Serial~~ No. 6,875,247 ~~10/011,386~~ by TeGrotenhuis et al. filed Dec. 5, 2001 which is incorporated herein by reference as if reproduced in full below) including reactive distillation, gas storage (such as devices for swing adsorption described in U.S. Patent No. 6,508,862 filed Apr. 30, 2001 which is incorporated herein by reference as if reproduced in full below)